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Competition and Efficiency in Hungarian Banking

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and
Craig Neal

Considerable progress has been made in reforming the Hungarian banking system and strengthening its legal and regulatory framework. But Hungarian banking suffers from market segmentation and high nominal spreads, caused by high inflation, low leverage, and nonperforming loans.

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This paper — a product of the Financial Policy and Systems Division, Country Economics Department — is part of a larger effort in the department to study financial policy issues in transitional socialist economies. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Wilai Pitayatonakarn, room N9-003, extension 37664 (October 1992, 29 pages).

Banking reform started much earlier in Hungary than in other socialist countries and Hungary now has by far the most advanced system among transitional socialist economies.

Vittas and Neal discuss recent trends in competition and efficiency in Hungarian banking. They assess the performance of Hungarian banks and note the tremendous progress that has been made in expanding the number of competing banks, strengthening the legal and regulatory framework, increasing the banks' managerial autonomy, and promoting development of the private sector.

But Vittas and Neal also note that effective competition is constrained by the continuing segmentation of the market. In addition to the segmentation of corporate and household banking inherited from the old regime, a new segmentation appears to have emerged, between large and small banks, or between old and new banks.

The entry of new banks — especially joint-venture banks — has a clear impact on market shares, but competition appears to be more effective in increasing the range of services than in lowering bank spreads. The impact of foreign banks would be greater if they were allowed to open branches or at least to establish fully owned subsidiaries.

During the period under review, there was a collapse of long-term lending, reflecting both conservative lending practices and a subdued demand for investment finance. But the use of short-term credits has picked up considerably since 1988, in line with the ongoing restructuring of the Hungarian economy and the growth of services.

Reported nominal spreads and profit ratios appear to be high by international standards. For small banks, these reflect the high level of inflation and the low level of leverage. But for the large banks, the high nominal spreads may be more apparent than real because of the existence of nonperforming loans.

There is considerable uncertainty about the size of nonperforming loans, following the collapse of CMEA trade and its adverse impact on corporate profitability. Tackling the problem of nonperforming loans is important both for enhancing the efficiency of banks and for lowering nominal spreads, the high level of which appears to hinder the financing of new firms.

Produced by the Policy Research Dissemination Center

Competition and Efficiency

in

Hungarian Banking

Dimitri Vittas and Craig Neal

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Overall Structure

This paper discusses recent trends in competition and efficiency in Hungarian banking. The paper was completed in the second half of 1991 and covers the period between 1987 and 1990. It is based on a limited set of data on the operations and profitability of Hungarian banks[1]. Banking performance in Hungary is compared with that of several developing and developed countries.

Banking reform started much earlier in Hungary than in other Eastern European countries and Hungary now has by far the most advanced system in the region. Even before the creation of the so-called two-tier structure, the Hungarian system had, in addition to the National Bank of Hungary (NBH), a total of 14 institutions. These included the Foreign Trade Bank, the National Savings Bank (NSB), 10 domestic institutions operating as specialized finance institutes (SFIs), deposit associations or innovation funds and 2 joint venture banks (Citibank and Unicbank). There were also 260 savings cooperatives and, at the other end of the spectrum, a joint venture offshore bank with participation from 5 foreign banks.

The so-called two-tier structure was created in 1987 with the transfer of most of NBH's corporate banking business to three newly formed commercial banks. The number of banking institutions continued to expand with the establishment of new domestic institutions and the authorization of several new joint venture banks. The structure of the system was also affected by the conversion of some SFIs into commercial banks. At the end of 1990, the banking system, excluding the NBH, the State Development Institute and the savings cooperatives, comprised 30 institutions, namely, 4 large commercial banks, 8 joint venture banks, 7 other commercial banks (mostly ex-SFIs), 2 savings banks and 9 SFIs (Table 1)[2].

Entry continued in 1991 with 6 more joint venture banks, including a new banking subsidiary of IBUSZ, the travel company that was successfully privatized and listed on the Budapest Stock Exchange in 1990. IBUSZ Bank plans to build a network of over 100 branches and to compete in retail banking. A total of 21 foreign banks, mostly from neighboring continental European countries, participate in the Hungarian banking system. However, with few exceptions, their impact on the market, in terms of product innovation, modernization of operations and competitive drive, is diluted by their limited shareholdings in joint venture banks.

Since the 1987 reform, banking institutions operate under a sound regulatory framework that confers considerable autonomy to bank management, even among institutions with substantial state ownership, and allows credit and other business decisions to be made on economic criteria rather than through policy direction. However, the banking system continues to suffer from problems inherited from the old regime and has also been affected by the difficulties experienced by the Hungarian economy during its transition to a market-oriented system. Moreover, the effectiveness of the new

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[1] Given the rapid pace of change and the many shortcomings of the accounting data used, its findings should be treated with caution.

[2] A detailed account of the evolution of the Hungarian banking structure and the participation of foreign institutions in joint venture banks is given in Annex 1.

Table 1

HUNGARY: STRUCTURE OF BANKING SYSTEM, 1986-90

	1986	1987	1988	1989	1990
Large commercial banks	1	4	4	4	4
Joint venture banks	2	2	5	5	8
Other commercial banks	2	2	2	7	7
Savings banks	1	1	1	2	2
Specialized finance institutes	2	10	11	8	9
Deposit associations	4	-	-	-	-
Innovation funds	2	-	-	-	-
Total	14	19	23	26	30

regulatory and supervisory system remains to be tested in practice. Implementation is gradual and is constrained by the absence of well trained and experienced staff.

Under the recently approved Banking Act, banks are allowed to operate as universal institutions. The large banks have extensive equity holdings in industrial and commercial companies, but otherwise most banks are universal banks on paper only. They lack the financial and especially human resources to play an active part in such areas as investment banking and securities trading. Even in the area of privatizations, the role of the large banks is constrained by the absence of skilled staff.

The licensing of new banks is based on authorization criteria that include a minimum capital of 1 billion HUF (about 15 million US dollars). Following the enactment of the Securities Markets Act it is now possible to establish institutions specializing in investment banking or securities trading with a much smaller initial capital of only 50 million HUF (700,000 US dollars). Several specialized institutions have been created, including Credit Suisse First Boston, and these play an active part in promoting joint ventures in industry and commerce and facilitating the privatization process.

Based on data compiled by the NBH, year-end total assets of commercial banks and SFIs increased from 1,004 billion HUF in 1987 to 1,621 billion HUF in 1990 or by 61%. This is less than the cumulative rate of consumer price inflation, which totalled 75% between 1987 and 1990. Thus, despite the large increase in the number of banks, the real stock of bank assets suffered a significant decline. Average total bank assets also fell from 72% of GDP in 1988 to 70% in 1990 (Figure 1).

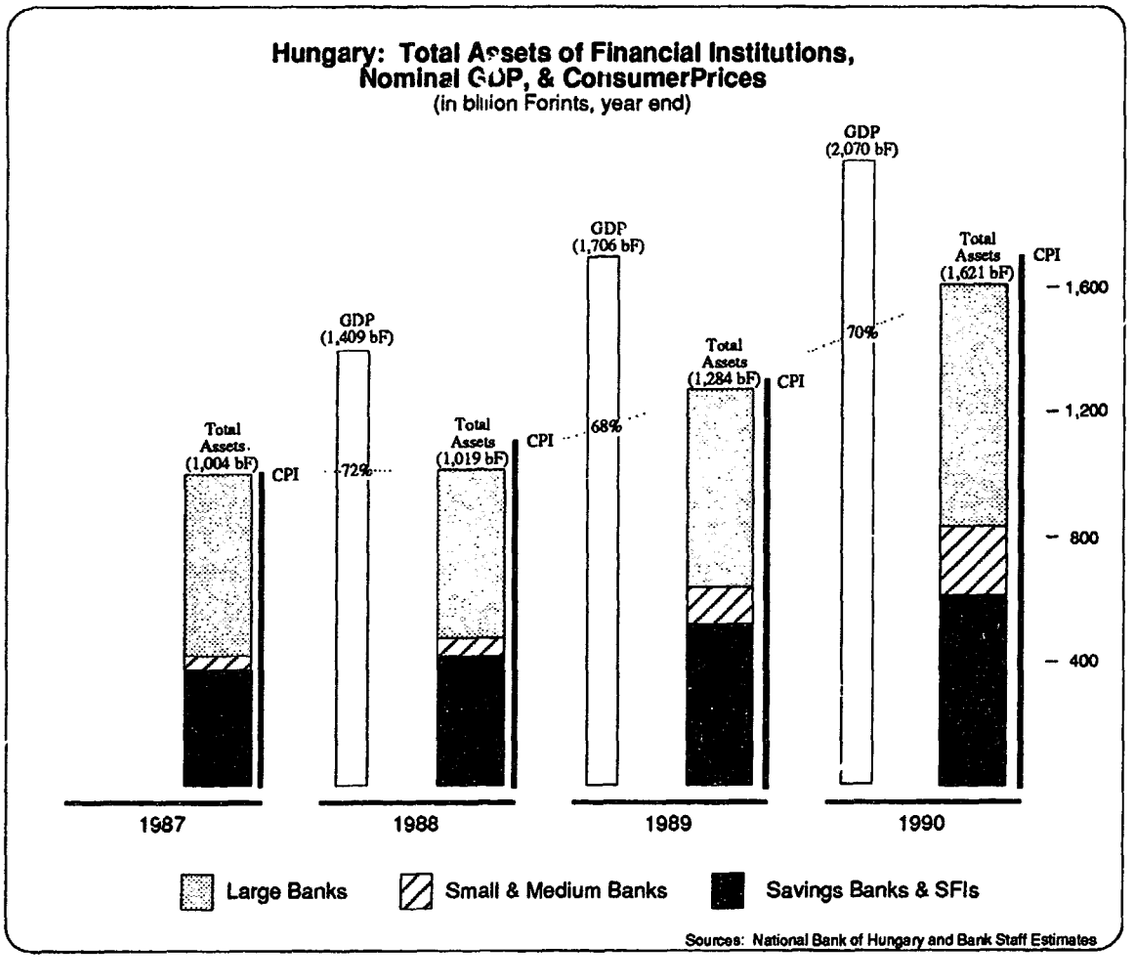
In contrast, reported equity more than doubled from 60 to 123 billion HUF. However, because of poor accounting standards, it is doubtful that this represents true equity. The NBH data are derived from financial statements prepared under Hungarian accounting standards. These are less rigorous than generally accepted international accounting standards in treating, inter alia, loan loss provisions and interest accrual on nonperforming loans. Available financial statements for the four large commercial banks that have been prepared under international accounting standards (IAS) corroborate the impression of overstated equity. The adjusted equity ratio of the four banks under IAS data was 4.8% against a reported equity ratio of 7.8% under NBH data.

Although problem loans are likely to be significant, there is considerable uncertainty over their magnitude and their effect on financial performance ratios. Problem loans are, in part, a legacy of banking practices during the old economic regime and, in part, a result of massive structural changes currently taking place in the Hungarian economy. Since the three new large banks inherited the portfolio, customer base and staff of the old state monobanking system, problem loans tend to be concentrated in these banks. Furthermore, problem loans are unevenly distributed among the large banks, reflecting the original division of assets. Additional problem loans have arisen from the collapse of the CMEA trade area and the abrupt reorientation of industry and commerce towards Western markets. New banks may also be experiencing nonperforming loans arising from this, though hard evidence on their size is not readily available.

Competition

Competition in the banking market has undoubtedly increased as a result of new entry. Thus, the share of the four large commercial banks in total assets fell from 58% in 1987 to 48% in 1990,

Figure 1



Miscellaneous Indicators

	# of Institutions		Total Asset	Shares of Total Assets		Average Total Assets : GDP	
	1987	1990	Growth '87-90	1987	1990	1988	1990
Total	19	30	61%	100%	100%	72%	70%
Large Banks	4	4	33%	58%	48%	40%	34%
Small & Medium Banks	10	14	378%	5%	14%	4%	8%
Savings Banks	1	3	64%	35%	36%	26%	26%
Special Finance Inst.	4	9	116%	2%	2%	1%	1%

Consumer Price Growth '87-90	Nominal GDP Growth '87-90
75%	69%

Sources: National Bank of Hungary and Bank Staff Estimates

while that of the small and medium-size banks rose from 5% to 14%. The share of savings banks remained virtually unchanged. SFIs play a very small part in the system, accounting for only 2% of total assets.

Competition has intensified considerably in some areas of corporate banking, especially the provision of working capital and trade finance and related financial services. But because of the high cost of building branch networks and the specialization of most new banks in a narrow range of services, it is less intense, though growing, in services for small and medium-size enterprises and remains quite subdued in retail banking.

The above quoted data on market shares may, however, somewhat overstate the increase in competition in Hungarian banking. First, adding the assets of the NSB to those of the four large commercial banks shows that the concentration ratio of the big five banks fell from 93% in 1987 to 82% in 1990.

Second, despite the expansion of branch networks by the large commercial banks and growing competition from the Postabank and the Bank for Savings Cooperatives, the market for household deposits continues to be dominated by the NSB. There is, thus, a continuing segmentation of corporate and household banking.

Third, the market for corporate banking services is also highly segmented. Foreign trade finance and related services are effectively dominated by the joint venture banks that offer better and quicker services and have better access to international banking networks and correspondent relationships. There is also some segmentation by clientele. Old companies continue to bank with the large commercial banks, while newer companies tend to deal with the joint venture banks.

Fourth, several of the new domestic commercial banks come from the ranks of SFIs and earlier deposit associations and innovation funds. They are unlikely to be major sources of innovation and operating efficiency and to offer strong competition to the larger banks by charging lower spreads and/or offering a higher quality of service. At present, these banks account for less than 4% of total assets against over 9% for the joint venture banks.

Fifth, the market for payment services and related transaction accounts of the corporate sector is dominated by the large commercial banks. This is mainly due to the underdeveloped state of banking infrastructure, especially the absence of an efficient payment system and active interbank market. This hampers smaller banks in effectively competing with the large banks by offering more sophisticated payment and cash management services.

The insufficient level of competition and innovation may thus be attributed to the segmentation of the market, the high level of market concentration and the dominant role played by state-owned or state-controlled banks[3]. With regard to market concentration, it is worth emphasizing that oligopolistic markets need not necessarily imply an uncompetitive or inefficient market. Banking and finance are essentially contestable industries where the threat of potential competition from new

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[3] In Hungary, the banks have been converted into joint-stock companies with considerable managerial autonomy, while state participation in their ownership has been reduced. Nevertheless, the banks are still, nominally at least, under state control.

entrants may be as important in influencing the behavior of banks as the number of actual competitors in the market. For example, the Canadian banking system is highly concentrated and dominated by six large banks. Yet, studies of Canadian banking have found it to be highly competitive[4]. It is also notable that in Canada, the Netherlands and Sweden, where concentration is quite high by international standards, banks operate with lower spreads and earn higher profits than in Italy, Norway and the United States, where banking concentration is low[5].

With regard to the role of public sector banks, the experience of state-owned banks in France and Austria and of the savings and cantonal banks in Germany and Switzerland suggests that state ownership of banking institutions is not necessarily incompatible with high operational efficiency. What seems to be required for efficiency is that state-owned or state-controlled banks operate in a competitive environment, enjoy managerial autonomy and independence from political intervention, and are accountable to a nonpolitical supervisory authority.

In Hungary, it is the combination of a high level of market concentration with the dominant role played by state-controlled institutions that implies that competitive forces may not be as strong and responsive to changing market conditions as might be desired. This situation is not uncommon in developing countries. The banking systems of many countries from Argentina to Egypt, Pakistan, Sri lanka and Tunisia exhibit similar structural features.

To strengthen the impact of competitive forces, it is necessary to increase the threat of potential competition by opening market entry not only to joint venture banks but also to wholly-owned subsidiaries or branches of foreign banks, while to help large domestic banks respond to the challenge of foreign competition it is necessary to accelerate the commercialization, restructuring and eventual privatization of most, if not all, state-owned institutions.

Developing countries have traditionally expressed concern about the role and impact of foreign banks. This concern reflects two, sometimes contrary, fears. First, there is concern that foreign banks may acquire dominant positions in domestic markets and drive out of business local institutions that are less efficient and have fewer capital and managerial resources. The second criticism is that foreign banks engage in "cream skimming" by dealing in profitable segments of the market and capturing economic rents resulting from existing regulations or the inefficiency of domestic banks.

These concerns were probably justified during colonial times when foreign banks behaved like colonial institutions and exploited local markets. But experience over the past two decades or so suggests that the first concern is not justified, because foreign banks are unlikely to acquire dominant positions in domestic banking systems, both because they are sensitive to local political concerns and because they may be deterred by the high capital and information costs of building a strong presence in retail markets.

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[4] For empirical tests of competition and market concentration, see Nathan and Neave (1989) and Shaffer (1990).

[5] For a discussion of differences in operating costs and efficiency among some developed countries, see Vittas (1991).

On the allegation of cream skimming, there is some evidence that foreign banks report higher profits than domestic banks, but the reasons for this are most likely their higher efficiency over local banks and the imposition of restrictions that provide regulatory rents to foreign banks. The best response to cream skimming is not to protect the position of inefficient domestic banks, but to remove the restrictions that give rise to regulatory rents and also to stimulate efficiency drives among domestic banks.

Entry into Hungarian banking is now free to institutions that meet normal regulatory requirements such as minimum capital, "fit and proper" management and good computer systems. However, entry of foreign banks, especially through branches, is still highly restricted. This weakens the competitive challenge to domestic banks and is likely to delay the emergence of a sound, competitive and efficient banking system.

Another aspect that weakens competition in the market is the burden of nonperforming loans. As discussed below, Hungarian banks operate with high nominal spreads. These may be necessary in order to cover future losses from nonperforming loans. However, when spreads are unduly high, good borrowers tend to subsidize bad ones. Under these conditions, good borrowers would seek finance outside the banking sector, either by issuing commercial paper and corporate bonds or by raising funds in the international markets.

These potential developments could create several problems. First, recourse to international markets would raise issues of international indebtedness and would require appropriate policies of risk management and hedging by the corporate sector that might not be readily developed and implemented.

Second, access to the capital markets (domestic or foreign) would be feasible only for the largest and strongest of enterprises with the best credit ratings. Their defection to the capital markets would weaken further the quality of the loan portfolio of Hungarian banks.

Third, the continuing high cost of bank finance would hinder the financing of new firms, especially in the industrial sector where financial requirements would be greater than those in the trade and other service sectors. Smaller firms would be penalized by their inability to access market-based sources of finance.

All these factors suggest that dealing with the problem of nonperforming loans should be a high priority in the process of creating a sound and competitive banking market.

Credits

Available NBH data report bank credits in forints to the enterprise sector[6] by size of bank. The following trends are highlighted. First, total forint credits to the enterprise sector fell in real terms between 1987 and 1990. Second, banks placed a growing emphasis on conservative lending policies, increasing their holdings of liquid assets and concentrating on short-term self-liquidating loans. Third, after suffering a big fall in 1988, short-term credits expanded in real terms in 1989 and

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[6] The NBH data refer to credits to entrepreneurs. Given their size this is taken to represent the whole enterprise sector, including state owned enterprises.

1990. Fourth, in contrast, long-term credits declined in real terms. Fifth, small and medium-size banks achieved a big increase in market share, especially in short-term credits. And, sixth, savings banks expanded considerably their involvement in enterprise lending, especially in long-term credits.

Enterprise credits represent only about one third of total bank assets. Their share in total assets declined from 36% in 1987 to 30% in 1989 and 1990. The remainder of assets is made up by housing loans and holdings of housing fund bonds (mainly by the NSB and accounting for about 22% of total assets), interbank claims (including balances with the NBH), loans in foreign currency[7], and miscellaneous assets. For the large banks, total enterprise credits fell from 56% of total assets in 1989 to 43% in 1990. This reflects a shift away from lending toward liquid assets or other lines of business, such as leasing.

The NBH data show that total enterprise credits increased by 35% between 1987 and 1990, well below the cumulative rate of consumer price inflation of 75% (Figure 2). Even with regard to producer price inflation, which amounted to 52% in cumulative terms, there was a big decrease in the real volume of forint credits. Some of this fall has been made up by the rise in foreign currency loans, especially for foreign trade purposes, but as already noted data on their volume are not readily available.

Total forint credits suffered a substantial fall in 1988 when the large banks appear to have drastically curtailed their short term credit facilities. After 1988, bank credits to the enterprise sector rose by 42%. This was still below cumulative consumer price inflation, which amounted to 51% between 1988 and 1990 and below cumulative producer price inflation, which equalled 47%, but the fall in real terms was much lower on both indices. The share of large banks in net new lending, both short and long-term, was only 3% against 52% for small and medium size banks and 43% for savings banks.

Most of the competitive action seems to have taken place in short-term credits. The share of short-term credits in total credits to the enterprise sector rose from 50% to 57% - correspondingly the share of long-term credits fell from 50% to 43%. Short-term credits accounted for 76% of the change in total credits outstanding over the period 1987-1990. However, the total volume of short-term credits rose by 54%, which was substantially less than cumulative inflation. The large banks accounted for only 8% of the increase in short-term credits. Small and medium-size banks contributed 62% of the change, while savings banks outperformed the large banks by providing 27% of the increase in short-term credits.

The relative increase in short-term credits in recent years is understated by the collapse of short-term credits by the large banks in 1988. If the analysis focusses on the data between 1988 and 1990, the share of short-term credits in total credit growth was even greater at 87%. Moreover, the nominal growth of short-term credits between 1988 and 1990 was 84%. Thus, short-term credits expanded in real terms in the more recent period (Figure 2).

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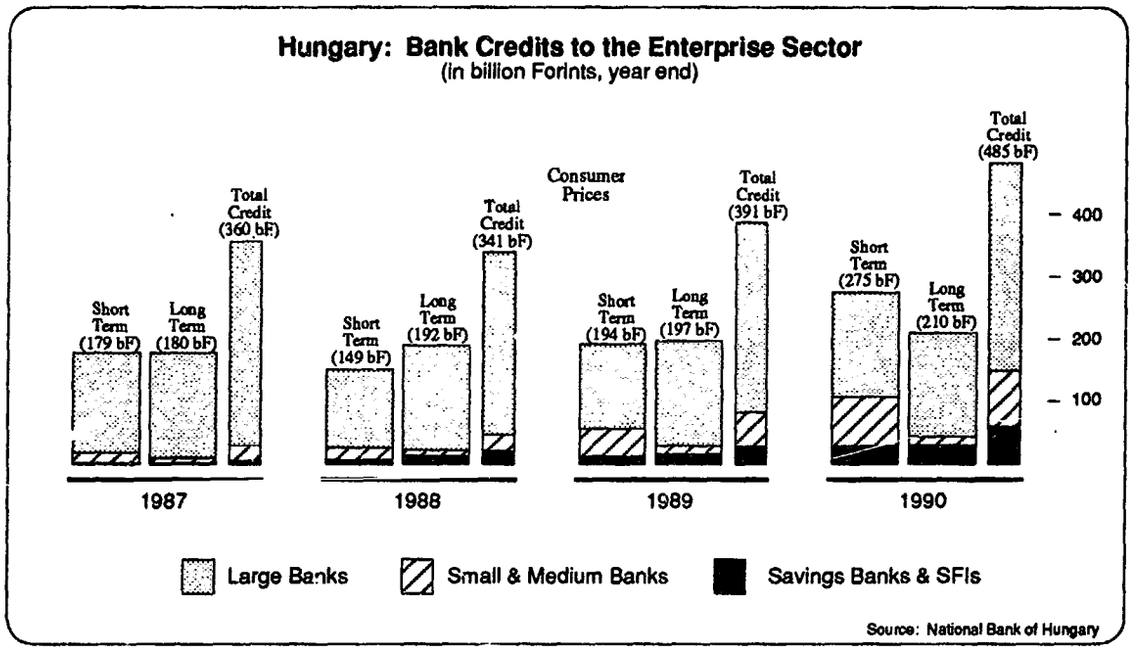
[7] NBH data do not provide an analysis of foreign currency loans between claims on banks and nonbanks. Their volume increased considerably since 1987 from 11% of total loans (or 9% of total assets) in 1987 to 25% of total loans (or 15% of total assets) in 1990.

Figure 2



Nominal Credit Growth, 1987 to 1990

	Total Credit	Short Term	Long Term	Consumer Prices
Total	35%	53%	17%	75%
Large Banks	1%	5%	-2%	
Small & Medium Banks	261%	341%	81%	Producer Prices
Savings Banks & SFIs	1033%	1200%	903%	52%

Source: National Bank of Hungary

Market Share, 1987 versus 1990

	Total Credit		Short Term		Long Term	
	1987	1990	1987	1990	1987	1990
Large Banks	92%	69%	89%	61%	94%	79%
Small & Medium Banks	7%	19%	10%	28%	4%	7%
Savings Banks & SFIs	2%	13%	1%	11%	2%	15%

Source: National Bank of Hungary

Nominal Credit Growth, 1988 to 1990

	Total Credit	Short Term	Long Term	Consumer Prices
Total	42%	53%	9%	51%
Large Banks	14%	35%	-2%	
Small & Medium Banks	235%	319%	60%	Producer Prices
Savings Banks & SFIs	190%	366%	110%	47%

Source: National Bank of Hungary

The small and medium sized banks, which are clearly the most dynamic segment of the market, were particularly aggressive in grabbing market share for short-term credits. Between 1987 and 1990, short-term credits extended by such banks grew 341% in nominal terms and their market share nearly trebled from 10% to 28%.

Long-term credits stagnated in nominal terms, rising by less than 17% between 1987 and 1990. Thus, they fell drastically in real terms. The savings banks accounted for 91% of the nominal increase in long-term credits, while small and medium-size banks contributed 21%. In contrast, the large banks registered a decline in their amounts outstanding, corresponding to 14% of the rise in long-term credits.

Despite the impression of increased competition provided by the aggressive move by savings banks into long-term credits to the enterprise sector, this development may be cause for concern. Savings banks have limited expertise in commercial banking, yet they appear to have extended within three years over 150% of their book equity in long-term credits. Charging into a market with high financial risks, which they may not be well equipped to assess, and doing so at a time of great economic uncertainty when other banks appear to be pulling back from long-term credits, does not seem to meet the canons of banking prudence. Savings banks may have a comparative advantage over other banks in assessing the value of real estate and they may have secured their long-term credits with adequate collateral, especially property. However, the absence of clear property rights over land and the considerable uncertainty over medium and long-term economic prospects would suggest the need for greater caution in treading a path that other more experienced banks are reticent in following.

The emphasis on short-term credits and liquid assets may reveal increased conservatism in the large banks as they move to more autonomous and independent management. It may also represent a cautious response to the increased uncertainty and lack of adequate information about investment prospects. Such a response is observed in many countries following the implementation of financial reform that eliminate directed credit programs and leave banks with considerable freedom in policy making but little expertise and information capital on which to base their credit decisions.

The fall in the relative share of long-term credits may also be explained by the weakness of investment demand, especially for long-term projects, which may be caused by the current economic uncertainty. It is notable that many of the special facilities introduced in recent years to support the development of the private sector are moving slowly. The low demand for some of these facilities may reflect, at least in part, their recent introduction, inadequate publicity and unfamiliarity of many of the new eligible enterprises with the tasks of compiling financial data and preparing convincing loan application forms. For nonsubsidized credits, a significant factor may be the very high level of market interest rates. At nominal interest rates of 30% or more, bank loans were very expensive when producer price inflation was less than 22%.

In addition to focussing on short-term lending, the banks appear to have reduced or withdrawn credit facilities from enterprises, especially in 1988. This has given rise to an expansion of inter-enterprise credit and the so-called "queuing" problem, a phenomenon that endangers the solvency and liquidity of the enterprise sector and also undermines the efficacy of monetary policy. The growth of inter-enterprise credit implies considerable bank disintermediation. But unlike other countries where disintermediation is caused by low interest rates on deposits and direct controls on the

allocation of credit, in Hungary it seems to have originated in the withdrawal of credit facilities by the banks and a concomitant large expansion of "distress" trade credit.

The queuing problem raises some interesting questions about the financial state of industrial and commercial companies. It appears to refer to the accumulation of payment orders that are issued by companies in favor of their suppliers but cannot be paid because of insufficient bank balances by such companies. The queuing phenomenon arises because banks delay execution of payment orders until their customers receive good funds from other firms.

However, data on the volume of payments subject to the queuing problem do not necessarily indicate the size of unpaid inter-enterprise credits. In the first place, companies that are near the point of failure may stop issuing payment orders so that a substantial part of uncollected trade credit will not be included in the data on queuing. Second, queuing may affect enterprises that face short-term liquidity problems but may otherwise be solvent and even have good prospects. The growing volume of queuing provides an indication of worsening liquidity problems but says little about the solvency of the enterprise sector. For the latter, detailed studies on the prospects of individual companies and whole industrial sectors would be necessary.

Liabilities

NBH data on deposits from the enterprise sector and on NBH refinancings also suggest an increase in bank competition and market-orientation. Four main trends are highlighted. First, a significant decline of bank reliance on NBH refinancing. Second, a rapid increase in the market share of small and medium size banks. Third, an increase in the borrow-back ratio from the enterprise sector, i.e. deposits taken from enterprises as a ratio of the credits extended to them. And, fourth, a segmentation of the market between ordinary banking services, such as checking accounts, and services related to trade finance. The former seems to be dominated by the large banks, whereas the new small and medium-size banks, especially the joint venture banks, appear to have a competitive edge in the latter.

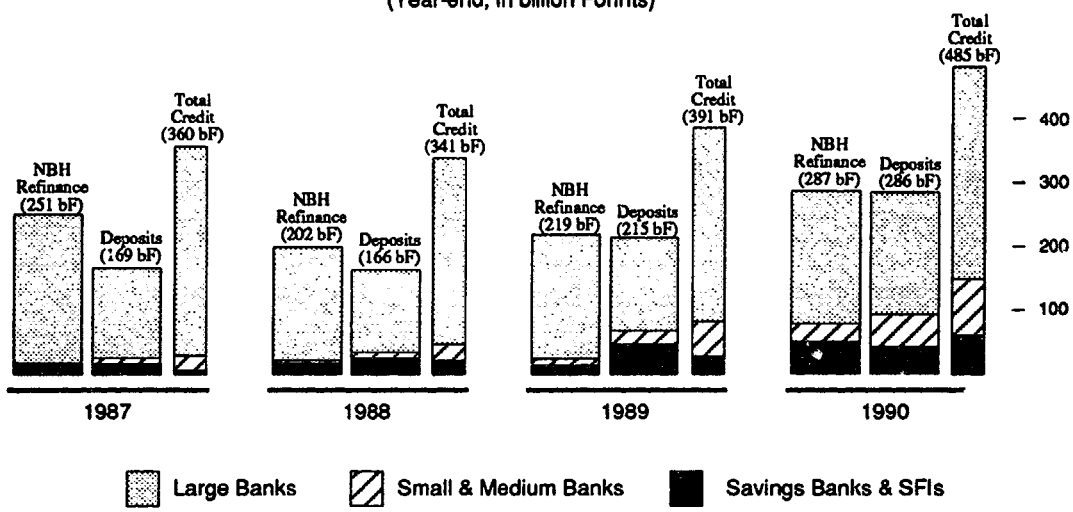
Reliance on NBH refinancing declined for the whole banking sector. After a substantial fall in 1988, the use of refinancing facilities grew more or less in line with total credits. In relation to credits extended to the enterprise sector, refinancing declined from 70% in 1987 to 59% in 1990 (Figure 3). This was caused by the fall in the reliance on refinancing by the large banks from 71% to 62% of their credits. In contrast, the small and medium-size banks steadily increased their NBH refinancing from 7% to 31% of their credits. Nevertheless, this remains only half of the corresponding ratio for the large banks.

A big part of the use of refinancing facilities by smaller banks is probably accounted for by the commercial banks that came from the ranks of SFIs. For the savings banks, the refinancing ratio was both high and quite volatile from year to year. Most likely, this was due to the use of refinancing facilities by the NSB for its loans to the nonbusiness sector.

The recourse to central bank refinancing also clearly declined relative to enterprise deposits and total assets. This reflected strong growth in the mobilization of business deposits (69% growth between 1987 and 1990). The small and medium size banks were particularly active, accounting for 35% of the increase in deposits. As a result, their share trebled from 6% to 18%. In contrast, the share of the four large banks fell from 84% to 67%, although they still accounted for 42% of the

Figure 3

Hungary: NBH Refinance, Deposits of the Enterprise Sector, & Bank Credits to the Enterprise Sector
(Year-end, in billion Forints)



Source: National Bank of Hungary

Nominal Refinance, Deposit, & Credit Growth, 1987 to 1990

	Refinance	Deposits	Total Credit	Consumer Prices
Total	14%	69%	35%	75%
Large Banks	-11%	35%	1%	
Small & Medium Banks	1559%	396%	261%	
Savings Banks & SFIs	204%	158%	1033%	

Source: National Bank of Hungary

Shares & Borrow-Back Ratio, 1987 versus 1990

	Refinance		Deposits		Borrow-Back Ratio	
	1987	1990	1987	1990	1987	1990
Large Banks	93%	72%	84%	67%	43%	58%
Small & Medium Banks	1%	10%	6%	18%	41%	57%
Savings Banks & SFIs	7%	18%	10%	15%	304%	69%
Total					47%	59%

Source: National Bank of Hungary

increase in deposits. After rising from 9% to 22% of total business deposits between 1987 to 1989, the share of savings banks fell back to 15% in 1990, following an 11% decline in nominal deposits.

Worth noting is the increase in the ratio of deposits taken from enterprises to credits extended to them from 47% in 1987 to 59% in 1990. This ratio, dubbed the borrow-back ratio in this paper, measures what the banks borrow back from their business customers. It is positively correlated with the liquidity of the enterprise sector. The apparent increase in enterprise liquidity is, at first blush, inconsistent with the widely mentioned problem of queuing. However, it may reflect an uneven distribution of liquidity and financial distress among enterprises. For example, distress may be restricted to certain firms in declining industries or in regions facing economic hardship; other firms, especially in export-oriented industries, tourism, construction, and trade, that are not linked to the distress sectors, may be buoyant.

Large banks are reported to still have the lion's share of business checking accounts. According to market estimates, they have over 70% of business bank accounts. The large banks derive substantial profits from operating demand deposit accounts on which they pay low interest rates. The lack of a payment system infrastructure limits the ability of other banks to compete effectively for such accounts.

However, there also appears to be a functional segmentation of the market between large and small banks as it is reported that many firms have accounts with different banks. They presumably use the new banks for trade finance and other self-liquidating short-term credits and the large banks for ordinary transaction purposes.

A segmentation of the banking market along these lines would be unlikely to persist in the longer run. Small and medium size banks are expected to expand their ordinary banking business in order to enhance their real profitability, especially following the creation of a giro payment system that will speed up the payment process and enable smaller banks to introduce cash management services and other payment-related facilities.

Efficiency and Profitability

Available aggregate data on bank profitability for different types of banks suffer from poor accounting standards and uncertainty about the size of non-performing loans. For what is their worth, the NBH data highlight the following points. First, Hungarian banks operate, in general, with high nominal spreads. Second, for the small and medium size banks, these are explained by the high rate of inflation and their low leverage. Third, for the large commercial banks, the high nominal spreads cannot be fully explained by the high rate of inflation and their moderate level of leverage. These banks either have large volumes of nonperforming loans or earn unusually high profits. Fourth, the small banks earn low real equity returns, but the large banks report high levels of real profitability. The latter may, however, be illusory if nonperforming loans are substantially higher than what is currently provided for.

The NBH data show that the nominal return on assets (ROA), based on average total assets, was around 4% for the whole system. Large banks were very close to the average, but small and medium-size banks earned ROAs of 7% in 1988 and 1989 and 6.4% in 1990. Specialized financial institutions also had high ROAs of over 6%, while the ROAs of savings banks rose from 2.3% in

1988 to 3.8% in 1989 and 3.6% in 1990. There was a general increase in nominal ROAs in 1989, but not in 1990 despite the acceleration of inflation from 17% to 29% (Figure 4).

The large nominal spread of small and medium-size banks is primarily explained by the high rate of inflation and their low leverage[8]. The nominal ROAs are translated into nominal ROEs of between 30% and 35%. For 1990 when consumer prices rose by 29%, the real ROE was just 3.8%, adequate but far from impressive. However, the real ROE was much higher at 11% in 1988 and 1989 when inflation was around 17%.

Applying the ROE analysis set out in Annex 2 shows that with a leverage of 4.3 and inflation of 17% in 1989, the required nominal ROA for small and medium-size banks for a 10% targeted real ROE would be 6.7%. With leverage rising to 5.5 but inflation accelerating to 29% in 1990, the required nominal ROA for the same targeted real ROE would rise to 7.6%. As already noted, nominal ROAs for small and medium-sized banks fell from 7% in 1989 to 6.4% in 1990.

As the large banks operate with much higher leverage, their lower nominal ROA is translated into a much higher nominal ROE of over 50%. Before allowing for the possible need for increased provisions against loan losses, this produced in 1990 a real ROE of 18% and as high as 28% or more in earlier years[9]. With a leverage of 11 and inflation of 17%, the required nominal ROA for a 10% targeted real ROE was 2.6% in 1989 instead of the realized 4.4%. In 1990, the leverage of the large banks increased slightly to 12 but with inflation accelerating to 29%, the required nominal ROA rose to 3.5% against a realized one of 4.3% (always assuming a targeted real ROE of 10%).

These levels of real profitability would be very high by international standards. However, the true level of real profitability would be much lower if current levels of provisioning were inadequate for covering loan losses from nonperforming loans. Nevertheless, a preliminary conclusion that emerges from this analysis of the NBH data is that the large Hungarian banks either have larger volumes of nonperforming loans than provided for or earn unusually high profits. The argument that the high level of nominal spreads is fully explained by the high level of inflation and low degree of leverage is not supported by these data.

To help refine the assessment of bank profitability, financial data were compiled for a subset of Hungarian banks for which IAS data were available. These cover seven banks (the four large commercial banks, two joint venture banks and the NSB) and largely corroborate the above results, although they also underscore some important differences. The IAS data for the four large commercial banks give a (pre-tax) nominal ROA in 1990 of 3.2%. This is 110 basis points lower than the corresponding figure based on NBH data. Among other things, this reflects larger provisioning charges and deduction of some accrued interest.

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[8] The relationship between spreads, leverage and inflation is discussed in Annex 2.

[9] NBH data do not offer any indication of gains resulting from the revaluation of assets. With inflation running at nearly 30%, revaluation gains on fixed assets, trade investments and equity holdings could cover anything between a quarter and a half, if not more, of the erosion of the real value of book equity.

Figure 4

% Return on Average Assets *
— NBH Data —

	1988	1989	1990
Total	3.4%	4.4%	4.4%
Large Banks	3.8%	4.4%	4.3%
Small & Medium Banks	7.0%	7.1%	6.4%
Savings Banks	2.3%	3.8%	3.6%
Special Finance Inst.	6.2%	3.4%	6.3%

Sources: National Bank of Hungary

Leverage: Average Assets / Average Equity *
— NBH Data —

	1988	1989	1990
Total	15.0	12.6	12.6
Large Banks	13.5	11.3	12.1
Small & Medium Banks	4.3	4.3	5.5
Savings Banks	78.4	55.6	36.8
Special Finance Inst.	2.4	2.7	3.1

Sources: National Bank of Hungary

% Return on Average Equity *
— NBH Data —

	Nominal			Real		
	1988	1989	1990	1988	1989	1990
Total	51.4%	55.0%	54.9%	30.6%	32.4%	20.1%
Large Banks	50.8%	49.5%	52.2%	30.0%	27.8%	18.0%
Small & Medium Banks	30.6%	30.6%	34.9%	12.6%	11.6%	4.6%
Savings Banks	176.8%	212.7%	134.0%	138.7%	167.2%	81.4%
Special Finance Inst.	15.0%	9.4%	19.4%	-0.8%	-6.5%	-7.5%
Inflation in CPI	16.0%	17.0%	29.0%			

Sources: National Bank of Hungary

* Before IAS adjustments for non-performing loans.

The four large banks have a much higher leverage under IAS data, mainly because of the negative impact of loan provisioning and write-offs on their equity capital. With a leverage of 21, their nominal ROE was as high as 66% and their real ROE no less than 20% (Figure 5).

The two small and medium-size banks (both joint venture banks), for which IAS data are available, show a nominal ROA of 6.1%. This is only 30 basis points lower than that obtained from NBH data for all small and medium-size banks. With a leverage of 6, the nominal ROE was 34% and the real ROE 4%, again very close to the NBH data.

The IAS data for the NSB show big differences from the NBH data on savings banks, especially regarding the degree of leverage and the nominal ROE. Thus, the leverage of the NSB was only 26 under IAS data against 37 (for the two savings banks) under NBH data. The ROA was slightly lower at 3.2% compared to 3.6% but the pre-tax ROE for the NSB under IAS definitions was 82.6% against 134% for the savings banks under the NBH definitions.

The IAS data include both pre and post tax figures. The two small and medium-size banks covered by the data had a relatively light tax burden that amounted to less than 9% of their pre-tax profits. This is explained by the special tax holidays granted to banks with foreign participation. In contrast, the large Hungarian banks and the NSB are heavily taxed. Their tax burden equaled 43% and 53% respectively of their reported pre-tax net income.

IAS data confirm the impression of high nominal spreads and ROAs for all groups of banks and high real ROEs for all the banks, except the small and medium size banks that operate with unusually low leverage. However, these data are also subject to the large uncertainty regarding the true level of nonperforming loans. The operating ratios of Hungarian banks will be much worse if nonperforming loans turn out to be larger than provided for. The likelihood that this may be the case has increased substantially as a result of the collapse of trade with the old Soviet block.

Assessing the impact of a bigger volume of nonperforming loans, and therefore of the adequacy of spreads and profit levels, is difficult without detailed information about provisioning policies. However, assuming that the 39 billion HUF of total provisions shown in the 1990 IAS accounts were obtained by applying a 60% average level of provisioning would imply a recognized volume of nonperforming loans of 65 billion HUF or about 12.5% of the total loans of 515 billion HUF of the four large banks. If the true level of nonperforming loans was substantially higher than this, both reported profits would be reduced by the suspension of interest accrual on the additional nonperforming loans and the banks' capital would be eroded by the need to make large additional provisions.

According to IAS data, the four large banks earned total profits, before provisions for loan losses, taxes and dividends, of just over 28 billion HUF in 1990. They used 6 billion for new provisions, were taxed to the tune of 9 billion HUF and paid dividends of 6 billion HUF. Their retained earnings amounted to nearly 7 billion HUF.

But, with inflation running at nearly 30%, their retained earnings would need to be about 10 billion HUF to maintain the real value of equity. This would leave 12 billion HUF for additional provisions and suspension of interest accrual. With an average lending rate of 28.6% for 1990 and an assumed average level of provisioning of 60%, the available funds would cover an increase in

Figure 5

Return on Assets
— IAS Data —

	1990 pre-tax	1990 post-tax	# of institutions
Total	3.2%	1.8%	7
Large Banks	3.1%	1.8%	4
Small & Medium Banks	6.1%	5.6%	2
Savings Banks	3.2%	1.5%	1

Sources: National Bank of Hungary and Bank Staff Estimates

Leverage
— IAS Data —

	1990
Total	21.0
Large Banks	21.0
Small & Medium Banks	5.6
Savings Banks	25.8

Sources: National Bank of Hungary and Bank Staff Estimates

Return on Equity
— IAS Data —

	– Nominal –		– Real –	
	1990 pre-tax	1990 post-tax	1990 pre-tax	1990 post-tax
Total	68.0%	37.4%	30.2%	6.5%
Large Banks	65.9%	37.5%	28.6%	6.6%
Small & Medium Banks	34.2%	31.3%	4.0%	1.8%
Savings Banks	82.6%	38.9%	41.6%	7.7%

1990 Consumer Price Inflation 29.0%

Sources: National Bank of Hungary and Bank Staff Estimates

nonperforming loans of only 13.5 billion HUF. Anything higher than that would cause an erosion of the real equity of the banks[10].

Thus, the apparent high spreads leave little room for an increased volume of nonperforming loans. Moreover, there are several reasons to suggest that the banks may not be able to sustain their present spreads. First, as inflation slows down, the banks will benefit less from the current high spreads between average lending rates and rates paid on demand deposits. Second, bank overhead costs will rise as the banks develop their branch networks and install expensive computer systems and banking technology. Third, competition for loan and other business is likely to intensify further. Although spreads have not declined so far despite the increased number of competing banks, this may well change in the future.

Thus, action to tackle nonperforming loans and recapitalize the large banks may be required at an early stage. The Hungarian authorities have already approved the issue of NBH guarantees to cover 50% of bad loans inherited by the large banks in 1987 and estimated at about 21 billion HUF. However, this measure would clearly prove inadequate if nonperforming loans turn out to be much higher than allowed under current provisioning policies.

Revenues and Costs

The data provided by NBH do not contain a detailed breakdown of income and expense items. An analysis of operating income ratios and intermediation spreads is not possible for the whole banking sector. The IAS accounts contain data on costs and revenues for the seven banks for which such accounts are available. However, even IAS data suffer from many disaggregation problems and make difficult a meaningful analysis of revenues and costs. For example, very large expense items appear in some of the financial statements under the heading of "other expenses" or "other operating expenses". The result is that assumptions made regarding the treatment of these expenses greatly influence operating cost ratios.

The data on revenues and costs highlight the following points. First, Hungarian banks have high shares of fee-based incomes. This is partly attributed to the tendency of banks to charge for all types of services that in more mature Western European markets tend to be provided free of charge. Second, joint venture banks operate with unusually low cost/income ratios. Third, the gross income margin of the large banks is divided between a direct cost of intermediation of 5.9% and a cost of capital of 1.8%. And, fourth, the large banks incur a heavy burden of taxation that amounts in total to 3.4% of assets.

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[10] In many developing countries undergoing extensive economic restructuring, it is often argued that nonperforming loans may be as high as 30% of total loans and may require a 60% average level of provisioning. Applying these proportions to the large Hungarian banks would imply nonperforming loans of 150 billion HUF, an increase of 85 billion HUF over those already provided for. Interest suspension on these loans would amount to 24 billion HUF and required new provisions to 51 billion HUF. These would produce a net loss of 53 billion HUF for 1990 against equity capital of 37 billion HUF. Even before additional provisions, the suspension of interest accrual would produce a net loss of 2 billion HUF.

The IAS data show that the four large commercial banks had an average interest margin of 4.8% in 1990. Adding net fee and other income of 2.9% raises the gross income margin to 7.7%. The large banks also had relatively large total expenses (including provisions for loan losses) of 4.5% of average total assets, resulting in a pre-tax ROA of 3.2%. The four large banks also had a total cost/income ratio of 59%, leaving them with a high pre-tax profit ratio of 41% (Figure 6). The relatively low cost/income ratio and their high profit ratio reflect the largely wholesale nature of their business. This is further underlined by the high level of noninterest income, which contributed 38% of gross income. The four large banks earned a pre-tax ROE of 66%. Allowing for inflation, this amounted to a real pre-tax ROE of nearly 29%.

The two smaller banks covered in the sample of banks with IAS accounts reported an average interest margin of 6.5%, a gross income margin of 8.3%, a total cost to assets ratio of 2.2% and a pre-tax ROA of 6.1%. Their total cost/income ratio was 26.4% and their pre-tax profit ratio an extremely high 73.6%. Despite these impressive operating asset and income ratios, the small banks earned rather low real ROEs. As already discussed above, this was mainly due to their high leverage in conjunction with the high rate of inflation. It is worth noting that despite their reliance on trade finance and modern financial services, their noninterest income contributed only 21% of gross income or nearly half the level reported by the four large commercial banks.

The operating asset ratios of the NSB reflect its involvement in housing finance, although its operating costs are probably understated in the analysis undertaken in this paper. The item "other operating expenses" mostly covers expenses relating to nonbanking activities, such as the construction of flats, and for this reason two-thirds of such expenses have been netted out from noninterest income. It is not clear to what extent the one-third of other operating expenses that is treated as banking operating expenses provides an understatement or overstatement of such costs. On this basis, the NSB reported in 1990 an interest margin of 2.7% of average total assets and a gross income margin of 7.9%. Deducting total costs of 4.7%, leaves a pre-tax ROA of 3.2%. The total cost/income ratio of the NSB was only 59%, resulting in a pre-tax profit ratio of 41%. It is interesting to note that net noninterest income amounted to 65% of gross income, which is much higher than the corresponding ratio for the four large commercial banks and is unusually high by international standards. However, the share of noninterest income, the gross income margin and the cost/income ratio are highly sensitive to the treatment of other operating expenses. On the other hand, neither the ROA nor the ROE would be affected. The pre-tax ROE of the NSB was an impressive 82.6%, corresponding to 41.6% in real terms.

The data on costs and revenues allow an analysis of the gross income of banks between the direct cost of intermediation and the cost of capital. In the case of the large Hungarian commercial banks, their gross income margin is divided between a direct cost of intermediation of 5.9% and a cost of capital of 1.8% of average total assets (Figure ??). The former consists of staff costs (0.6%), depreciation (less than 0.1%), other operating expenses (3.0%), annual provisions (0.9%) and income taxes (1.3%). The latter is allocated between dividends (0.8%) and retained earnings (1.0%).

The data also allow an assessment of the impact of explicit and implicit taxes. These include taxes on bank income, dividends paid to the state, the opportunity cost of reserve and liquidity requirements and the effect on taxes on interest income earned by households[11].

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[11] The large banks held virtually no household deposits and were not affected by this tax.

Figure 6

Hungary: Operating Asset and Income Ratios

— IAS Data —

	All Banks (7)	Large Banks (4)	Small & Med. Banks (2)	Savings Banks (1)
Operating Asset Ratios (% of average total assets)				
Interest Margin	4.0	4.8	6.5	2.7
Non-interest Margin	3.8	2.9	1.8	5.2
Gross Income Margin	7.8	7.7	8.3	7.9
Operating Costs	3.8	3.6	1.7	4.2
Provisions	0.7	0.9	0.5	0.5
Total Costs	4.5	4.5	2.2	4.7
Pre-tax ROA	3.3	3.2	6.1	3.2
Operating Income Ratios (% of gross income)				
Non-interest Income	48.4	38.1	21.4	65.4
Total Cost	58.3	59.2	[illegible]	59.4
Pre-tax Profit	41.7	40.8	73.6	40.6
Operating Equity Ratios (% of average equity)				
Pre-tax Nominal ROE	68.0	65.9	34.2	82.6
Pre-tax Real ROE	30.2	28.6	4.0	41.6

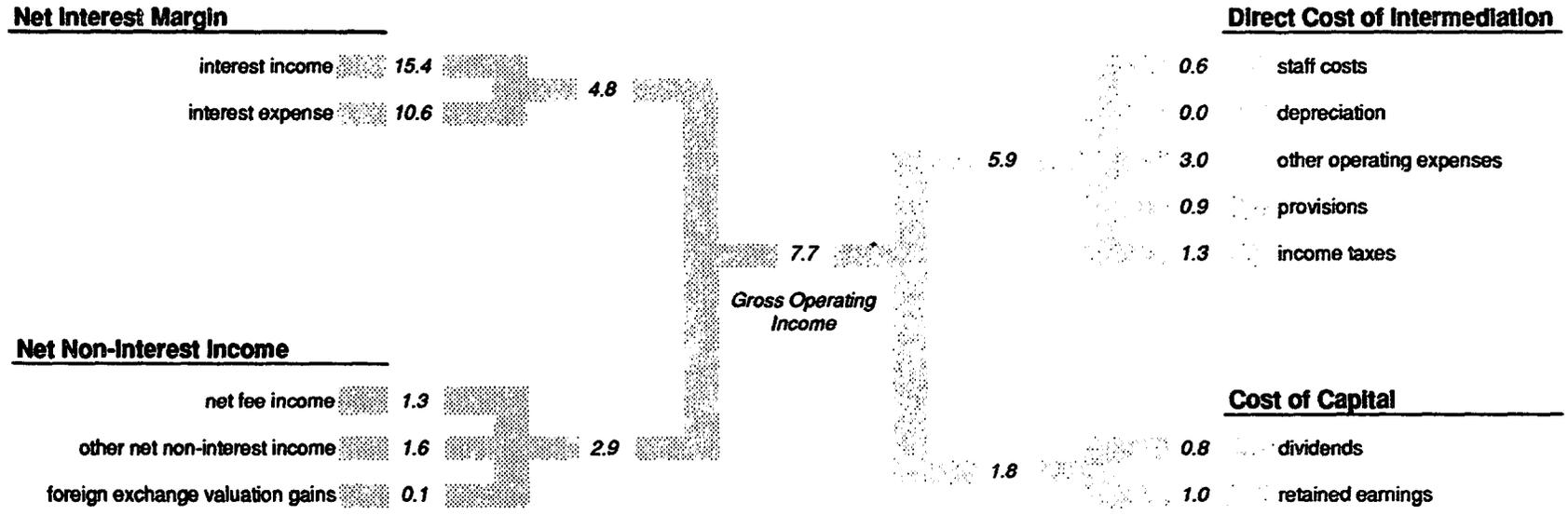
Sources: Bank Staff Estimates

Figure 7

Hungary: Sources and Disposition of Commercial Bank Revenues

— % of Average Total Assets (699,137 BHUF) —

(based on 1990 IAS Data for the four largest commercial banks)



Direct and Implict Taxes		— % of average —	
		assets	deposits
1.)	income taxes	1.3	
2.)	dividends paid to State	0.3	
3.)	cost of required reserves	1.4	4.3
4.)	cost of required liquidity	0.3	
5.)	tax on household interest earnings	0.0	0.0
	Sum	3.4	

Sources: Banks Staff Estimate

For the four banks, income taxes in 1990 amounted to 1.3% of assets. With an estimated direct state ownership of 42%, dividends paid to the state represented 0.3%[12]. The opportunity cost of reserve and liquidity requirements depends on the difference between the rate earned on such requirements and market rates of interest. In Hungary, banks were required in 1990 to maintain noninterest-earning reserves equal to 15% of their forint deposits. With an average loan rate of 28.6% for the year, the cost of reserve requirements amounted to 1.4% of average assets[13]. The opportunity cost of the 5% liquidity requirement is estimated at 0.3% of assets on the assumption that such liquid assets earned the basic NBH rate of 22% against an average loan rate of 28.6%. In total the explicit and implicit taxes borne by the four large banks amounted to 3.4% of assets.

International Comparisons

Comparing bank efficiency across countries is fraught with many difficulties. Because of differences in capital structure, product mix and accounting conventions, bank operating ratios can provide only a rough indication of bank efficiency. Their assessment and interpretation requires a detailed knowledge and understanding of both banking structure and banking practice in different countries.

Three types of bank operating ratios can be used: operating asset ratios, which relate revenues and expenses to average total assets; operating income ratios, which relate revenues and expenses to gross income (defined as the sum of net interest income and net noninterest income); and operating equity ratios, which relate revenues and expenses to average equity.

Differences in capital structure tend to have a big impact on operating asset and income ratios. Thus, banks with a higher equity capital and lower leverage tend to report higher operating asset and income ratios. This is because banks with a higher equity capital need to borrow less in order to support a given level of assets and this is reflected in higher interest and gross income margins as well as ROAs. Because they report a higher gross income margin, such banks also show a lower cost/income ratio. However, for given spreads between loan and deposit rates, the ROEs of low leverage banks tend to be lower than those of banks with higher leverage.

Differences in business mix also affect operating ratios. Banks with extensive participation in retail business, which incurs higher processing and monitoring costs and involves higher margins than wholesale business, tend to operate with higher margins and other operating asset ratios. They also show high cost income ratios. But it does not follow that they are necessarily less efficient than banks with low margins and low cost/asset ratios. In fact, banks with substantial differences in product mix may report similar ROAs and ROEs even though they may have vastly different income margins and cost/income ratios.

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[12] This understates the amount of dividends accruing to the state because a large share of the remaining equity of the banks is held by state owned enterprises.

[13] The reserve requirement tax was lowered in 1991 when the NBH started paying interest on reserve balances, initially at 15.4% (70% of the NBH basic rate of 22%) and since October 1991 at 10.5% (50% of the slightly lowered basic rate of 21%). The NBH also imposed a 15% reserve requirement on foreign currency deposits.

Bank operating ratios may further be distorted by differences in accounting practices regarding the valuation of assets (book rather than market value or replacement cost), treatment of depreciation and other reserves (as liabilities rather than asset offsets), level of loan loss provisioning (inadequate provisioning inflating the book value of loans and equity as well as overstating all income and profit ratios of banks), and use of hidden reserves. For developing countries where banks may have large unprovided nonperforming loans, inadequate provisioning may seriously distort reported operating ratios.

Finally, a very important factor affecting the level of bank operating ratios is the range and quality of services offered by banks. Banks that offer a limited range of services, operate a small number of branches, do not use computerized facilities, and rely on labor-intensive and slow processing methods will tend to have low operating costs, especially if they operate in countries with low wages and low rents. However, such banks transfer many of the operating costs of banking to their customers in the form of inconvenient location of branches and long and slow moving lines. Their low cost ratios would not be an indication of operating efficiency.

A comparison of bank operating ratios in Hungary and selected developed and developing countries provides interesting insights but needs to be interpreted with great caution[14]. Banks in Germany, the Netherlands, France, and Canada reported during the period 1985-89 interest margins between 2% and 3%, gross income margins between 2.5% and 3.5%, and ROAs between 0.6% and 1%. On the other hand, banks in the United States, the United Kingdom, Italy and Spain operated with much higher ratios ranging up to interest margins of 4% and gross income margins of well over 5%, although their ROAs were not higher than 1.25%. Banks in Austria and France operate with low ROAs, which are largely explained by their very high leverage.

Among developing countries, banks in Turkey report high gross income margins, followed by Moroccan and Portuguese banks. Turkish banks also report very high ROAs. However, among all the countries surveyed in this paper, Hungarian banks have by far the highest gross income margins and ROAs. The interest margins of Hungarian banks (based on IAS data for 1990) were well over 4% (except for the NSB), their gross income margins around 8% and their ROAs over 3%. Indeed, the joint venture banks reported ROAs of over 6%.To a large extent, these are explained by the low leverage and high inflation. But a significant part must be attributed either to the need to provide against unrecognized nonperforming loans or to high levels of real profitability.

Except for the American banks, which suffered from large volumes of nonperforming loans during this period and were forced to make unusually large provisions, the ratios of most other banks reflect their business mix, with banks that have a greater exposure to high cost/high margin business generally reporting higher operating asset ratios. Worth noting is the experience of the UK building societies, which have traditionally specialized in housing finance, a market with low margins and low costs. They had a gross income margin of only 2.4% but a ROA of over 1.25%.

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[14] Bank operating ratios in some developed countries and the problems of international comparisons are extensively reviewed in Vittas (1991), while detailed data for most OECD countries are reported in OECD (1991). Those for developing countries are obtained from various World Bank reports. Annex 3 provides tables with detailed data on bank operating ratios for selected developed and developing countries.

The operating income ratios of banks in developed countries show that American and British banks relied to a greater extent on fee-based income than banks in continental European countries. For the American money center banks, the share of fee-based income was 46%. Among developing countries, banks in Egypt and Greece have high levels of fee-based income. In Egypt, this was due to limits on interest spreads and to a high level of regulated commissions. In Greece, it was partly caused by the suspension of interest accrual on large volumes of nonperforming loans. Among Hungarian banks, the noninterest income of the NSB was very high, but this reflected its involvement in nonbanking business. The four large commercial banks generated 38% of their gross income from fee-based services.

The total cost/income ratios of banks in developed countries, including operating costs and provisions, range between 75% and 85% of gross income. The only exceptions are the UK building societies with a low cost ratio of only 48% and the American money center banks with an unusually high ratio of 92%. The latter has been caused by the large volume of provisions at 25% of gross income. Hungarian banks at 59% generally had low total cost/income ratios. Worth noting is the very low cost/income ratio of the 2 joint venture banks. At 26% these must rank among the lowest such ratios anywhere in the world. This is clearly related to the limited range of their services, their limited branch networks and their generally high level of operating efficiency as well as their low leverage[15].

ROE analysis provides a combination of ratios that may best summarize the various operating ratios of banks and may be very useful in analyzing differences in performance across groups of banks or across countries. ROE analysis is based on two fundamental identities of bank operating ratios. First, the ROA is equal to the product of the gross income margin (gross income as a proportion of total assets) and the profit ratio (net income as a proportion of gross income); and second, the ROE is equal to the product of the ROA and bank leverage (i.e. the inverse of the equity capitalization ratio)[16].

The ROE analysis for Hungarian banks (Table 2) shows clearly the positive impact of low leverage on the profit ratio, gross margin and ROA of the joint venture banks. Yet, their real ROE is very low. The ROE analysis for banks in high income countries (Table 3) also shows that smaller banks which have lower leverage require a bigger ROA to achieve a given ROE than large banks which operate with higher leverage. Banks in France and Austria report satsifactory ROEs despite their low ROAs because of their high leverage.

Similarly, banks with a higher profit ratio require a higher gross margin to achieve a given level of ROA than banks with a lower profit ratio. The last point is clearly seen by contrasting the experience of two groups of institutions that have very similar ROAs but big differences in their profit ratios and gross income margins: the UK building societies, which have a profit ratio of 52% and a gross income margin of 2.4% and the Spanish commercial banks, which report a profit ratio of 24% and a gross income margin of 5%.

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[15] It is emphasized that low leverage inflates gross income and therefore compresses the cost/income ratio.

[16] In algebraic notation, if P stands for net income, G for gross income, E for equity and A for total assets, the first identity states that P/G * G/A = P/A and the second that P/A * A/E = P/E.

Table 2

ROE Analysis: Banks in Selected Developing Countries

	Profit Ratio	Gross Margin	ROA	Leverage	Nominal ROE	Real ROE
Hungary (1990)						
Large commercial banks	40.8	7.70	3.14	21.0	65.9	28.6
Joint Venture Banks	73.6	8.30	6.11	5.6	34.2	4.0
Savings Banks	40.6	7.90	3.21	25.8	82.6	41.6
Egypt (1986-90)						
Public sector banks	23.4	3.04	0.71	52.9	37.6	14.7
Large JV banks	38.5	3.84	1.48	16.5	24.4	3.7
Small and medium banks	27.8	4.06	1.13	14.5	16.4	-3.3
Foreign banks	20.8	3.89	0.81	16.4	13.3	-5.6
Portugal (1985-89)						
Commercial banks	14.7	4.01	0.59	12.4	7.3	-4.6
Greece (1985-89)						
Large commercial banks	12.3	3.02	0.37	39.7	14.7	-2.2
Turkey (1985-89)						
Commercial banks	34.6	6.47	2.24	24.5	54.9	2.0
Morocco (1988-90)						
Large commercial banks	31.0	4.20	1.30	16.8	21.8	17.0
Thailand (1986-88)						
Commercial banks	17.9	3.13	0.56	19.2	10.8	7.9

Table 3

ROE Analysis: Banks in Selected High Income Countries

	Profit Ratio	Gross Margin	ROA	Leverage	Nominal ROE	Real ROE
United States (1985-89)						
All commercial banks	16.1	4.91	0.79	16.2	12.8	9.3
Small banks	18.2	4.89	0.89	12.3	10.9	7.5
Medium banks	18.4	5.06	0.93	15.3	14.2	10.7
Money center banks	7.6	4.58	0.35	21.8	7.6	4.3
Other large banks	14.7	4.84	0.71	18.5	13.1	9.6
Germany (1985-89)						
All commercial banks	23.8	2.94	0.70	21.5	15.1	12.5
Big commercial banks	24.9	3.58	0.89	21.4	19.0	16.3
Savings banks	23.7	3.38	0.80	26.7	21.3	18.6
Credit cooperatives	19.1	3.46	0.66	26.0	17.1	14.5
Giro landesbanks	26.1	0.88	0.23	43.5	10.0	7.5
United Kingdom (1985-89)						
Large commercial banks	17.1	4.92	0.84	19.9	16.7	10.7
Building societies	52.1	2.40	1.25	23.3	29.1	22.5
Spain (1986-89)						
Commercial banks	23.8	5.01	1.19	15.3	18.2	9.6
Savings banks	18.5	5.69	1.05	16.7	17.5	9.0
Canada (1984-88)						
Domestic banks	24.3	3.75	0.91	20.7	18.8	14.8
Foreign banks	24.1	2.45	0.59	13.4	7.9	4.3
Netherlands (1985-89)						
Commercial banks	25.7	2.76	0.71	25.0	17.8	16.6
Savings banks	29.6	3.41	1.01	12.1	12.3	11.2
Italy (1985-89)						
All commercial banks	22.0	4.50	0.99	15.6	15.4	8.7
Large commercial banks	17.3	4.13	0.72	18.7	13.4	6.8
Savings banks	23.5	5.08	1.19	15.5	18.5	11.6
Austria (1985-89)						
Large commercial banks	24.0	1.58	0.38	30.7	11.6	9.2
Savings banks	22.9	2.26	0.52	27.0	14.0	11.5
France (1985-89)						
Commercial & mutual banks	13.4	2.88	0.38	37.7	14.5	10.5
Large commercial banks	10.9	2.84	0.31	48.3	14.9	10.9

Thus, by comparison to banks in selected developed and developing countries, the operating asset ratios of Hungarian banks appear to be rather high. The higher ratios may partly be explained by the higher rate of inflation of the Hungarian economy and partly by the higher level of nonperforming loans. But they may also reflect lower operating efficiency as well as the segmentation of the banking market and less intense competition. The real ROEs of the large Hungarian banks are much higher than those of most groups of banks in other countries. Yet, as the analysis of the preceding sections suggests, this high level of real profitability would be illusory if nonperforming loans turned out to be higher than allowed for.

Conclusions

The data analyzed above underscore a number of policy issues:

* First, despite the large increase in the number of banks, competition is constrained by the continuing segmentation of the market. Several of the new banks come from the ranks of SFIs and earlier deposit associations and innovation funds. They are unlikely to be major sources of innovation and competition, at least in the near future. In addition to the segmentation of corporate and household banking that has been inherited from the old regime, a new segmentation between large and small banks, or between old and new banks, also appears to have emerged.

* Second, the entry of new banks, especially joint venture banks, is having a clear impact on market shares, but competition appears to be more effective in increasing the range of services than in lowering bank spreads. The large banks appear to have opted for relatively high spreads and not for fighting back to defend their market position. For their part, the new joint venture banks are not undercutting the big banks. Rather, because of their low leverage and the high level of inflation, they seem to charge high nominal spreads. Their success in gaining market share may be based on providing better quality through faster and more reliable service. As their leverage grows, these banks will be able to achieve higher levels of real profitability and in due course they may also lower their spreads. For this to happen, there must be greater effective competition between small and large banks as well as among small banks.

* Third, the continuing authorization of joint venture banks, the number of which has reached 14 at the latest count, is bound to stimulate further competition and innovation. However, the impact of foreign banks would be greater if they are allowed to open branches or at least to establish fully-owned subsidiaries.

* Fourth, the data indicate a collapse of long-term lending, especially by the large banks. This may reflect a conservative approach by the banks now that they are independently managed. Conservative lending practices are most probably reinforced by the lack of information capital (e.g. up-to-date data on enterprise credit, analyses of sectoral prospects, etc.). The decline in long-term credit may also reflect a weak demand for investment finance, resulting from economic uncertainty during the transition to a market-based system. The authorities have introduced several credit facilities to encourage the provision of long-term credits. The take-up of these credit

facilities appears to be slow. A question of major importance regards initiatives that could be taken to expand the information capital of banks and improve their ability to assess the creditworthiness of different projects and monitor the performance of borrowers.

* Fifth, in contrast to long-term credits, the use of short-term credits has picked up considerably after 1988. This is associated with the ongoing restructuring of the Hungarian economy and enterprise sector and provides optimism for the future. Despite their size, the large banks do not occupy a dominant position in this market.

* Sixth, reported nominal and real profitability in the banking sector appear to be quite high. The high spreads are only partly explained by the low level of leverage and the nigh rate of inflation. Moreover, the present high spreads may not be sustainable given the likely increase in overhead costs and the intensification of competition.

* Seventh, the true level of profitability clearly depends on the size of nonperforming loans. Even a small increase in nonperforming loans above what is already provided for would lower profits substantially. If nonperforming loans turn out to be substantially higher, not only the profits but also the equity of banks would be seriously eroded.

* Eighth, there is considerable uncertainty about the level of nonperforming loans, which has clearly been affected by the collapse of CMEA trade and its adverse impact on corporate profitability. Failure to tackle the problem of nonperforming loans would hinder the financing of new firms.

ANNEX 1

THE EVOLVING STRUCTURE OF HUNGARIAN BANKING

Prior to the establishment of the two-tier structure, the banking system comprised, in addition to the National Bank of Hungary (NBH), 1 large commercial bank (the Foreign Trade Bank), 2 joint venture banks (Citibank and Unicbank), 1 savings bank (the National Savings Bank- NSB) and 10 domestic institutions that operated mostly as specialized finance institutes (SFIs), innovation funds or deposit associations. There was also one offshore bank (the Central European Investment Bank).

In 1987, the number of institutions increased to 19, following the creation of the two-tier system that transferred most of the NBH's corporate banking business to three newly formed commercial banks (the Hungarian Credit Bank, the Commercial and Credit Bank, and the Budapest Bank) and the establishment by one of the latter of two subsidiaries that operated as SFIs. In the same year the pre-existing deposit associations and innovation funds were also converted into joint stock companies and operated formally as SFIs.

In 1988, 3 new joint venture banks were authorized (Interbank, later renamed Inter-Europa Bank, Postabank and Central European Credit Bank), while 1 more SFI was established by another of the large commercial banks.

1989 saw the creation of a further 3 institutions, bringing the total to 26. These included one savings bank (the Bank for Savings Cooperatives) and 2 SFIs (one was a subsidiary of the third large commercial bank and the other a joint venture with foreign interests). A major change also occurred with the conversion of 5 SFIs into commercial banks with universal banking licenses. Most of these originated from the old deposit associations and innovation funds, .

Finally, in 1990 3 more joint venture banks were authorized (the General Banking and Trust Co., Creditanstalt and Leumi Credit Bank) and 2 new SFIs. At the same time, another SFI was converted into a commercial bank.

Thus, at the end of 1990 the Hungarian banking system consisted of 4 large commercial banks, 8 joint venture banks, 7 other commercial banks, 2 savings banks, and 9 SFIs, giving a total of 30 institutions. In addition to these, there is the NBH, the State Development Institute that was created in 1987, and 260 savings cooperatives.

Entry continued in 1991 with 6 more joint venture banks, including Ibusz Bank, a subsidiary of the travel company that was successfully privatized and listed on the Budapest Stock Exchange in 1990.

Foreign bank participation through joint venture banks includes the following 22 institutions: 5 banks from Austria (Creditanstalt, GZ Bank, Osterreichische Volksbanken, Postsparkasse, and Zentralsparkasse und Commerzialbank); 4 banks from Italy (Banca Commerciale Italiana, Cariplo, Istituto Mobiliare Italiano through Generalinvest, a Swiss subsidiary, and San Paolo di Torino); 3 banks from Germany (Bayerische Vereinsbank, DG Bank and Dresdner Bank); 3 banks from France (Banque Nationale de Paris, Credit Lyonnais and Societe Generale); 2 banks from the United States

(Citibank and Heller International); 3 banks from Japan (the Long-term Credit Bank of Japan, Mitsui Taiyo Kobe Bank and Nomura Securities); 1 bank from Israel (Bank Leumi); and 1 bank from Korea (Daewoo Securities). The Central Bank of Exchange and Commerce (or Central Wechsel- und Creditbank) which appears as a partner in several joint venture banks is an Austrian bank that is fully owned by the NBH.

Although the number of foreign banks is clearly impressive, their impact on the Hungarian banking market is diluted by the limited shareholdings of most of them in joint venture banks. Their impact would have been much greater if foreign banks were allowed to open branches or at least establish fully-owned subsidiaries.

Table A1 provides data on total assets and staff for each bank for 1990. The number of branches for a few banks is also shown.

Table A1

HUNGARY: ASSETS, STAFF AND BRANCHES OF BANKS AND SFIs, 1990

	Assets		Staff	Branches
	HUF mn	%		
Large commercial banks				
Hungarian Credit Bank	256.3	15.8	4400	85
Foreign Trade Bank	230.0	14.2	878	6
Commercial & Credit Bank	191.5	11.8	3543	70
Budapest Bank	103.4	6.4	1960	50
Subtotal	781.2	48.2	10781	211
Joint venture banks				
Postabank	41.1	2.5	506	12
Inter-Europa Bank	25.0	1.5	149	
Unicbank	21.6	1.3	78	
Central-European Credit Bank	17.4	1.1	32	
Citibank	15.4	1.0	82	
Creditanstalt	15.3	0.9	26	
General Banking & Trust (AEB)	14.1	0.9	207	
Leumi Credit Bank	2.0	0.1	30	
Subtotal	151.9	9.4	1110	
Other commercial banks				
Agrobank	16.1	1.0	454	
Mezobank	14.4	0.9	216	
Konzumbank	8.7	0.5	119	
General Bank for Venture Finance AVB	8.2	0.5	94	
Dunabank	6.7	0.4	120	
Iparbank	4.2	0.3	64	
Ybl Bank	3.4	0.2	110	
Subtotal	61.7	3.8	1177	
Savings banks				
National Savings Bank	558.3	34.4	14033	431
Bank for Savings Cooperatives (MTB)	24.7	1.5	171	11
Subtotal	583.0	36.0	14204	
Specialized finance institutes (SFIs)				
Investrade	9.2	0.6	22	
Industrial Development Bank	7.6	0.5	71	3
Ingatlan (Real Estate) Bank	7.3	0.5	64	
Merkantil Bank	5.2	0.3	39	
Realbank	4.8	0.3	30	
Kulturbank	3.1	0.2	18	
Investbank	2.6	0.2	33	
Innofinance	2.1	0.1	28	
Portfolio Bank	1.0	0.1	7	
Subtotal	42.9	2.6	312	
Grand Total	1620.7	100.0	27584	

ANNEX 2

Spreads, Leverage and Inflation

The measurement of bank efficiency is difficult for any banking system, mainly because of the absence of a satisfactory definition of bank output. Neither the number nor the value of loans and deposits, which are extensively used in econometric studies of bank efficiency and economies of scale, provide a good indication of the value of services offered by banks. The value added of banks, given by total labor costs and profits, provides a better indication of the size of the banking industry, but since it is a measure of both the output and cost of banking, it could not be used for measuring bank efficiency. Faced with these difficulties, most analysts resort to the use of accounting data on bank margins, costs and profits as measures of efficiency. However, as discussed extensively in Vittas (1991), the usefulness of such ratios, not only for international comparisons but also for comparing banks in a given country, is undermined by differences in capital structure, business mix, inflation rates, and accounting conventions.

A useful approach that takes account of many of the above differences is the ROE (return on equity) analysis. This is based on two identities between profitability ratios, bank leverage and product mix. ROE analysis can also be used to shed light on the relationship between bank spreads, leverage and inflation. It should, however, be stressed that ROE analysis cannot overcome the problems caused by differences in accounting conventions, especially with regard to the valuation of assets, the level and treatment of loan provisioning and the use of hidden reserves.

The first identity used in ROE analysis states that the real ROE "r" is equal to leverage "g" times the real ROA "a", or in algebraic terms,

$$r = g * a \tag{1}$$

Similarly, the nominal ROE "n" is equal to leverage "g" times the nominal ROA "b"

$$n = g * b \tag{2}$$

With inflation equal to "p", the nominal ROE is also equal to

$$n = \{(1+r) * (1+p)\} - 1 \tag{3}$$

replacing (3) into (2) and solving for the nominal ROA gives

$$b = \frac{\{(1+r) * (1+p)\} - 1}{g} \tag{4}$$

When inflation is zero, "b" equals "a". Equation (4) shows that the required nominal ROA, representing the average spread or margin on all assets after the deduction of all costs, depends on the targeted real ROE, the level of inflation and the degree of leverage. A targeted real ROE of 10% would require a nominal ROA of 0.50% with zero inflation and leverage of 20, but the required nominal ROA would rise to 0.78% with 5% inflation, to 1.05% with 10% inflation and 2.15% with inflation of 30%. With a leverage of 10 instead of 20, the corresponding required nominal ROAs would be twice as high and with a leverage of only 5, they would be four times as high.

The second identity used in ROE analysis stipulates that the nominal ROA "b" is equal to the product of the nominal gross income margin "m" and the profit ratio "q".

(5) $$b = m * q$$

or

(6) $$m = \frac{b}{q}$$

and

(7) $$m = \frac{\{(1+r) * (1+p)\} - 1}{g * q}$$

The profit ratio is equal to (1-c), where "c" is the cost/income ratio based on total costs including all types of provisions. Thus, a high cost bank will have a low profit ratio and vice versa. A bank with a profit ratio of 20% would need a gross income margin that is 5 times its nominal kOA, but a bank with a 50% profit ratio would require a gross margin of only twice its ROA. The profit ratio reflects the product mix as well as the range and quality of services offered by a bank but it also depends on its operating efficiency. Equation (7) shows that a combination of high inflation, low leverage and high/cost operations may require a very high gross income margin in order to achieve a targeted real ROE of 10%.

ANNEX 3

TABLE C1
OPERATING ASSET RATIOS
percent of average total assets

	Interest Margin	Non-Interest Income	Gross Income Margin	Operat. Costs	Provis.	Total Costs	Pre-tax ROA	Taxes	Post-tax ROA	
HUNGARY (1990)										HUNGARY (1990)
All banks	4	3.8	7.8	3.8	0.7	4.5	3.3			All banks
Large commercial banks	4.8	2.9	7.7	3.6	0.9	4.5	3.2			Large commercial banks
Small & medium banks	6.5	1.8	8.3	1.7	0.5	2.2	6.1			Small & medium banks
Savings banks	2.7	5.2	7.9	4.2	0.5	4.7	3.2			Savings banks
EGYPT (1986-90)										EGYPT (1986-90)
Large public sector banks	1.66	1.38	3.04	1.10	1.23	2.33	0.71	0.34	0.37	Large public sector banks
Large joint venture banks	2.30	1.54	3.84	na	na	2.36	1.48	0.37	1.11	Large joint venture banks
Small & medium size banks	2.60	1.46	4.06	1.75	1.18	2.93	1.13	0.20	0.93	Small & medium size banks
Foreign banks	1.97	1.92	3.89	na	na	3.08	0.81	0.21	0.60	Foreign banks
PORTUGAL (1985-89)										PORTUGAL (1985-89)
Commercial banks	3.26	0.75	4.01	2.25	1.17	3.42	0.59	0.08	0.51	Commercial banks
GREECE (1985-89)										GREECE (1985-89)
Large commercial banks	1.06	1.96	3.02	2.36	0.29	2.65	0.37			Large commercial banks
TURKEY (1985-89)										TURKEY (1985-89)
Commercial banks	4.48	1.99	6.47	3.12	1.11	4.23	2.24			Commercial banks
MOROCCO (1988-90)										MOROCCO (1988-90)
Large commercial banks	2.85	1.35	4.20	2.60	0.30	2.90	1.30			Large commercial banks
THAILAND (1986-88)										THAILAND (1986-88)
Commercial banks	2.32	0.81	3.13	2.07	0.50	2.57	0.56	0.27	0.29	Commercial banks

TABLE C2
OPERATING ASSET RATIOS
percent of average total assets

	Interest Margin	Non-Interest Income	Gross Income Margin	Operat. Costs	Provis.	Total Costs	Pre-tax ROA	Taxes	Post-tax ROA	
UNITED STATES (1985-89)										**UNITED STATES (1985-89)**
All Commercial Banks	3.39	1.52	4.91	3.28	0.84	4.12	0.79	0.23	0.56	All Commercial Banks
Small banks	4.05	0.84	4.89	3.35	0.65	4.00	0.89	0.18	0.71	Small banks
Medium banks	3.73	1.33	5.06	3.46	0.67	4.13	0.93	0.20	0.73	Medium banks
Money centre banks	2.46	2.12	4.58	3.11	1.12	4.23	0.35	0.19	0.16	Money centre banks
Other large banks	3.27	1.57	4.84	3.20	0.93	4.13	0.71	0.15	0.56	Other large banks
GERMANY (1985-89)										**GERMANY (1985-89)**
All commercial banks	2.21	0.73	2.94	2.11	0.13	2.24	0.70	0.38	0.32	All commercial banks
Big commercial banks	2.60	0.98	3.58	2.58	0.11	2.69	0.89	0.49	0.40	Big commercial banks
Savings banks	3.05	0.33	3.38	2.15	0.43	2.58	0.80	0.53	0.27	Savings banks
Credit cooperatives	3.07	0.39	3.46	2.73	0.07	2.80	0.66	0.45	0.21	Credit cooperatives
Giro landesbanks	0.78	0.10	0.88	0.48	0.17	0.65	0.23	0.15	0.08	Giro landesbanks
UNITED KINGDOM (1985-89)										**UNITED KINGDOM (1985-89)**
Large commercial banks	3.21	1.71	4.92	3.27	0.81	4.08	0.84	0.34	0.50	Large commercial banks
Building societies	2.04	0.36	2.40	1.15	0.00	1.15	1.25	0.45	0.80	Building societies
SPAIN (1986-89)										**SPAIN (1986-89)**
Commercial banks	4.02	0.99	5.01	3.19	0.63	3.82	1.19			Commercial banks
Savings banks	5.00	0.69	5.69	4.28	0.36	4.64	1.05			Savings banks
CANADA (1984-88)										**CANADA (1984-88)**
Domestic banks	2.78	0.97	3.75	2.20	0.65	2.85	0.91	0.30	0.60	Domestic banks
Foreign banks	1.73	0.72	2.45	1.52	0.34	1.86	0.59	0.30	0.29	Foreign banks
NETHERLANDS (1985-89)										**NETHERLANDS (1985-89)**
Commercial banks	2.02	0.74	2.76	1.82	0.23	2.05	0.71			Commercial banks
Savings banks	3.12	0.29	3.41	2.36	0.04	2.40	1.01			Savings banks
ITALY (1985-89)										**ITALY (1985-89)**
All commercial banks	3.20	1.30	4.50	2.97	0.54	3.51	0.99	0.42	0.57	All commercial banks
Large commercial banks	2.68	1.45	4.13	2.89	0.52	3.41	0.72	0.25	0.47	Large commercial banks
Savings banks	3.83	1.25	5.08	3.00	0.89	3.89	1.19	0.66	0.53	Savings banks
AUSTRIA (1985-89)										**AUSTRIA (1985-89)**
Large commercial banks	1.34	0.24	1.58	1.20		1.20	0.38	0.06	0.32	Large commercial banks
Savings banks	2.05	0.21	2.26	1.74		1.74	0.52	0.11	0.41	Savings banks
FRANCE (1985-89)										**FRANCE (1985-89)**
Commercial & mutual banks	2.40	0.48	2.88	1.92	0.57	2.49	0.39	0.13	0.26	Commercial & mutual banks
Large commercial banks	2.29	0.56	2.85	1.88	0.65	2.53	0.32	0.11	0.20	Large commercial banks

TABLE C3
OPERATING INCOME RATIOS
percent of gross income

	Interest Margin	Non-Interest Income	Gross Income	Operat. Costs	Provis.	Total Costs	Pre-tax Profit Ratio	Taxes	Post-tax Profit Ratio	
HUNGARY (1990)										HUNGARY (1990)
All banks	51.3	48.7	100.0	48.7	9.0	57.7	42.3	0.0	0.0	All banks
Large commercial banks	62.3	37.7	100.0	46.8	11.7	58.4	41.6	0.0	0.0	Large commercial banks
Small & medium banks	78.3	21.7	100.0	20.5	6.0	26.5	73.5	0.0	0.0	Small & medium banks
Savings banks	34.2	65.8	100.0	53.2	6.3	59.5	40.5	0.0	0.0	Savings banks
EGYPT (1986-90)										EGYPT (1986-90)
Large public sector banks	54.6	45.4	100.0	36.2	40.5	76.6	23.4	11.2	12.2	Large public sector banks
Large joint venture banks	59.9	40.1	100.0	na	na	61.5	38.5	9.6	28.9	Large joint venture banks
Small & medium size banks	64.0	36.0	100.0	43.1	29.1	72.2	27.8	4.9	22.9	Small & medium size banks
Foreign banks	50.6	49.4	100.0	na	na	79.2	20.8	5.4	15.4	Foreign banks
PORTUGAL (1985-89)										PORTUGAL (1985-89)
Commercial banks	81.3	18.7	100.0	56.1	29.2	85.3	14.7	2.0	12.7	Commercial banks
GREECE (1985-89)										GREECE (1985-89)
Large commercial banks	35.1	64.9	100.0	78.1	9.6	87.7	12.3			Large commercial banks
TURKEY (1985-89)										TURKEY (1985-89)
Commercial banks	69.2	30.8	100.0	48.2	17.2	65.4	34.6			Commercial banks
MOROCCO (1988-90)										MOROCCO (1988-90)
Large commercial banks	67.9	32.1	100.0	61.9	7.1	69.0	31.0			Large commercial banks
THAILAND (1986-88)										THAILAND (1986-88)
Commercial banks	74.1	25.9	100.0	66.1	16.0	82.1	17.9	8.6	9.3	Commercial banks

TABLE C4
OPERATING INCOME RATIOS
percent of gross income

	Interest Margin	Non-Interest Income	Gross Income	Operat. Costs	Provis.	Total Costs	Pre-tax Profit Ratio	Taxes	Post-tax Profit Ratio
UNITED STATES (1985-89)									
All Commercial Banks	69.0	31.0	100.0	66.8	17.1	83.9	16.1	4.7	11.4
Small banks	82.8	17.2	100.0	68.5	13.3	81.8	18.2	3.7	14.5
Medium banks	73.7	26.3	100.0	68.4	13.2	81.6	18.4	4.0	14.4
Money centre banks	53.7	46.3	100.0	67.9	24.5	92.4	7.6	4.1	3.5
Other large banks	67.6	32.4	100.0	66.1	19.2	85.3	14.7	3.1	11.6
GERMANY (1985-89)									
All commercial banks	75.2	24.8	100.0	71.8	4.4	76.2	23.8	12.9	10.9
Big commercial banks	72.6	27.4	100.0	72.1	3.1	75.1	24.9	13.7	11.2
Savings banks	90.2	9.8	100.0	63.6	12.7	76.3	23.7	15.7	8.0
Credit cooperatives	88.7	11.3	100.0	78.9	2.0	80.9	19.1	13.0	6.1
Giro landesbanks	88.6	11.4	100.0	54.5	19.3	73.9	26.1	17.0	9.1
UNITED KINGDOM (1985-89)									
Large commercial banks	65.2	34.8	100.0	66.5	16.5	82.9	17.1	6.9	10.2
Building societies	85.0	15.0	100.0	47.9	0.0	47.9	52.1	18.8	33.3
SPAIN (1986-89)									
Commercial banks	80.2	19.8	100.0	63.7	12.6	76.2	23.8		
Savings banks	87.9	12.1	100.0	75.2	6.3	81.5	18.5		
CANADA (1984-88)									
Domestic banks	74.1	25.9	100.0	58.7	17.3	76.0	24.3	8.0	16.0
Foreign banks	70.6	29.4	100.0	62.0	13.9	75.9	24.1	12.2	11.8
NETHERLANDS (1985-89)									
Commercial banks	73.2	26.8	100.0	65.9	8.3	74.3	25.7		
Savings banks	91.5	8.5	100.0	69.2	1.2	70.4	29.6		
ITALY (1985-89)									
All commercial banks	71.1	28.9	100.0	66.0	12.0	78.0	22.0	9.3	12.7
Large commercial banks	64.9	35.1	100.0	70.0	12.6	82.6	17.4	6.1	11.4
Savings banks	75.4	24.6	100.0	59.1	17.5	76.6	23.4	13.0	10.4
AUSTRIA (1985-89)									
Large commercial banks	84.8	15.2	100.0	75.9		75.9	24.1	3.8	20.3
Savings banks	90.7	9.3	100.0	77.0		77.0	23.0	4.9	18.1
FRANCE (1985-89)									
Commercial & mutual banks	83.3	16.7	100.0	66.7	19.8	86.5	13.5	4.5	9.0
Large commercial banks	80.4	19.6	100.0	66.0	22.8	88.8	11.2	3.9	7.0

UNITED STATES (1985-89)
All Commercial Banks
Small banks
Medium banks
Money centre banks
Other large banks

GERMANY (1985-89)
All commercial banks
Big commercial banks
Savings banks
Credit cooperatives
Giro landesbanks

UNITED KINGDOM (1985-89)
Large commercial banks
Building societies

SPAIN (1986-89)
Commercial banks
Savings banks

CANADA (1984-88)
Domestic banks
Foreign banks

NETHERLANDS (1985-89)
Commercial banks
Savings banks

ITALY (1985-89)
All commercial banks
Large commercial banks
Savings banks

AUSTRIA (1985-89)
Large commercial banks
Savings banks

FRANCE (1985-89)
Commercial & mutual banks
Large commercial banks

TABLE C5
OPERATING EQUITY RATIOS
percent of gross income

	Interest Margin	Non-Interest Income	Gross Income	Operat. Costs	Provis.	Total Costs	Pre-tax ROE	Taxes	Post-tax ROE	Memo Equity Ratio	
HUNGARY (1990)											HUNGARY (1990)
All banks	84.0	79.8	163.9	79.8	14.7	94.5	69.3	0.0	0.0	4.76	All banks
Large commercial banks	101.1	61.1	162.1	75.8	18.9	94.7	67.4	0.0	0.0	4.75	Large commercial banks
Small & medium banks	36.4	10.1	46.5	9.5	2.8	12.3	34.2	0.0	0.0	17.85	Small & medium banks
Savings banks	69.6	134.0	203.6	108.2	12.9	121.1	82.5	0.0	0.0	3.88	Savings banks
EGYPT (1986-90)											EGYPT (1986-90)
Large public sector banks	87.8	73.0	160.8	58.2	65.1	123.3	37.6	18.0	19.6	1.89	Large public sector banks
Large joint venture banks	38.0	25.4	63.4	na	na	38.9	24.4	6.1	18.3	6.06	Large joint venture banks
Small & medium size banks	37.7	21.2	58.8	25.4	17.1	42.5	16.4	2.9	13.5	6.90	Small & medium size banks
Foreign banks	32.3	31.5	63.9	na	na	50.6	13.3	3.4	9.9	6.09	Foreign banks
PORTUGAL (1985-89)											PORTUGAL (1985-89)
Commercial banks	40.3	9.3	49.6	27.8	14.5	42.3	7.3	1.0	6.3	8.09	Commercial banks
GREECE (1985-89)											GREECE (1985-89)
Large commercial banks	42.1	77.8	119.8	93.7	11.5	105.2	14.7			2.52	Large commercial banks
TURKEY (1985-89)											TURKEY (1985-89)
Commercial banks	109.8	48.8	158.6	76.5	27.2	103.7	54.9			4.08	Commercial banks
MOROCCO (1988-90)											MOROCCO (1988-90)
Large commercial banks	47.7	22.6	70.4	43.6	5.0	48.6	21.8			5.97	Large commercial banks
THAILAND (1986-88)											THAILAND (1986-88)
Commercial banks	44.6	15.6	60.2	39.8	9.6	49.4	10.8	5.2	5.6	5.20	Commercial banks

TABLE C6
OPERATING EQUITY RATIOS
percent of average equity

	Interest Margin	Non-Interest Income	Gross Income	Operat. Costs	Provis.	Total Costs	Pre-tax ROE	Taxes	Post-tax ROE	Memo Equity Ratio	
UNITED STATES (1985-89)											UNITED STATES (1985-89)
All Commercial Banks	55.0	24.7	79.7	53.2	13.6	66.9	12.8	3.7	9.1	6.16	All Commercial Banks
Small banks	49.6	10.3	59.9	41.1	8.0	49.0	10.9	2.2	8.7	8.16	Small banks
Medium banks	56.9	20.3	77.3	52.8	10.2	63.1	14.2	3.1	11.1	6.55	Medium banks
Money centre banks	53.7	46.3	100.0	67.9	24.5	92.4	7.6	4.1	3.5	4.58	Money centre banks
Other large banks	60.4	29.0	89.5	59.1	17.2	76.3	13.1	2.8	10.4	5.41	Other large banks
GERMANY (1985-89)											GERMANY (1985-89)
All commercial banks	47.5	15.7	63.2	45.4	2.8	48.2	15.1	8.2	6.9	4.65	All commercial banks
Big commercial banks	55.6	20.9	76.5	55.1	2.4	57.5	19.0	10.5	8.5	4.68	Big commercial banks
Savings banks	81.3	8.8	90.1	57.3	11.5	68.8	21.3	14.1	7.2	3.75	Savings banks
Credit cooperatives	79.7	10.1	89.9	70.9	1.8	72.7	17.1	11.7	5.5	3.85	Credit cooperatives
Giro landesbanks	33.9	4.3	38.3	20.9	7.4	28.3	10.0	6.5	3.5	2.30	Giro landesbanks
UNITED KINGDOM (1985-89)											UNITED KINGDOM (1985-89)
Large commercial banks	63.8	34.0	97.8	65.0	16.1	81.1	16.7	6.8	9.9	5.03	Large commercial banks
Building societies	47.6	8.4	55.9	26.8	0.0	26.8	29.1	10.5	18.6	4.29	Building societies
SPAIN (1986-89)											SPAIN (1986-89)
Commercial banks	61.4	15.1	76.5	48.7	9.6	58.3	18.2			6.55	Commercial banks
Savings banks	83.3	11.5	94.8	71.3	6.0	77.3	17.5			6.00	Savings banks
CANADA (1984-88)											CANADA (1984-88)
Domestic banks	57.6	20.1	77.6	45.5	13.5	59.0	18.8	6.2	12.4	4.83	Domestic banks
Foreign banks	23.1	9.6	32.8	20.3	4.5	24.9	7.9	4.0	3.9	7.48	Foreign banks
NETHERLANDS (1985-89)											NETHERLANDS (1985-89)
Commercial banks	50.5	18.5	69.0	45.5	5.8	51.3	17.8			4.00	Commercial banks
Savings banks	37.9	3.5	41.4	28.6	0.5	29.1	12.3			8.24	Savings banks
ITALY (1985-89)											ITALY (1985-89)
All commercial banks	49.8	20.2	70.0	46.2	8.4	54.6	15.4	6.5	8.9	6.43	All commercial banks
Large commercial banks	50.2	27.2	77.3	54.1	9.7	63.9	13.5	4.7	8.8	5.34	Large commercial banks
Savings banks	59.4	19.4	78.8	46.5	13.8	60.3	18.4	10.2	8.2	6.45	Savings banks
AUSTRIA (1985-89)											AUSTRIA (1985-89)
Large commercial banks	41.1	7.4	48.5	36.8		36.8	11.7	1.8	9.8	3.26	Large commercial banks
Savings banks	55.3	5.7	60.9	46.9		46.9	14.0	3.0	11.1	3.71	Savings banks
FRANCE (1985-89)											FRANCE (1985-89)
Commercial & mutual banks	90.6	18.1	108.7	72.5	21.5	94.0	14.7	4.9	9.8	2.65	Commercial & mutual banks
Large commercial banks	110.6	27.1	137.7	90.8	31.4	122.2	15.5	5.3	9.7	2.07	Large commercial banks

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